

CURRICULUM VITAE

Dr. Pawel Weronki

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Nationality: Polish

Education:

M.Sc. (1989) Dept. of Mathematics and Physics, University of Poznan, Poland
Thesis title: "Effect of Hydrostatic Pressure on Electric Conductivity of $\text{LiK}_4\text{H}_3(\text{SO}_4)_4$ Crystal"

Ph.D. (2000) Institute of Catalysis and Surface Chemistry, Polish Academy of Sciences, Krakow, Poland
Thesis title: "Kinetics and Topology of Irreversible Adsorption of Anisotropic Particles at Homogeneous Interfaces"

Employment:

1992-1994 Assistant, Institute of Catalysis and Surface Chemistry, Polish Academy of Sciences, Krakow, Poland

1994-2000 Senior Assistant, Institute of Catalysis and Surface Chemistry, Polish Academy of Sciences, Krakow, Poland

2000-pres. Assistant Professor, Institute of Catalysis and Surface Chemistry, Polish Academy of Sciences, Krakow, Poland

Accomplishments:

Developed extended Random Sequential Adsorption (RSA) model for nonspherical, interacting particles to solve protein adsorption problem

Developed extended RSA model for polydisperse particles, which had a great impact on understanding polydispersity effect on colloid adsorption

Studied irreversible adsorption of nanoparticles at heterogeneous interfaces to address maximum efficiency of selective protein adsorption important issue

Developed a new spectrophotometric flow-through cell for a colloidal application (monitoring of scattered light)

Collaborated with scientists from Yale University to investigate the effect of depletion interaction on colloid particle transport in porous media

Collaborated with scientists from Yale University to develop numerical models of reversible colloid and bacteria adsorption at secondary minimum of potential energy to solve important issues of virus transport in subsurface porous media and removal of microbial pathogens during riverbank filtration

Developed extended RSA model allowing description of multilayer adsorption of nanoparticle, which is expected to have a great impact on understanding multilayer adsorption of polyelectrolytes and proteins

Developed a novel model of colloid particle irreversible adsorption at homogeneous and heterogeneous surfaces, including particle-particle and particle-interface electrostatic interaction, allowing fast and exact computation of the deposition kinetics and formed monolayer structure

Awards and Honors:

Laureate of XVIII North Poland Competition in Chemistry

Finalist of XXXI Polish Olympic Competition in Chemistry

Semifinalist of XXXIII Polish Olympic Competition in Physics

Award of Polish Academy of Sciences for Distinguished Ph.D. Theses, Krakow 2000, Poland

Award for Outstanding Oral Presentation in Biosciences, *Symposium 2005 "Championing Scientific Careers"*, Los Alamos National Laboratory, Los Alamos, New Mexico

Professional Training:

March 1994	Chemistry Department at University of Dortmund and Institute of Spectrochemistry and Applied Spectroscopy, Dortmund, Germany (Tempus Project)
June 1994	Analytical Chemistry Department at University of Barcelona, Spain (Tempus Project)

September 1997	Biomedical Engineering Department at University of Gröningen, Netherlands, and Charles Sadron Institute, Strasbourg, France (Prof. P. Schaaf)
2001-2003	Post-Doctoral Associate at Chemical Engineering Department at Yale University, New Haven, Connecticut, USA
2005-pres.	Post-Doctoral Associate at Theoretical Division, Los Alamos National Laboratory, Los Alamos, New Mexico, USA

Research Interests:

Statistical mechanics of colloids, transport phenomena, filtration, electrokinetic phenomena, particle interaction, colloid and protein adsorption, structural forces, colloid crystals, spectroscopic methods for colloid characterization, application of numerical and statistical methods in chemical physics, Monte Carlo methods, Molecular Dynamics, self-assembling nanostructures, stiff differential equations, modeling and computer simulation of biosystems, cellular membranes and nucleic acids, artificial life

Research Grants:

2004-2006	Polish Ministry of Scientific Research and Information Technology, research grant #3 T09A 089 27 for the project “Localized Adsorption of Colloid Particles in the Formation of Multilayer Thin Films Obtained Using the Layer by Layer Method”
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